

## **SECTION 01044**

### **CUTTING AND PATCHING**

#### **PART 1 - GENERAL**

##### **1.1 QUALITY ASSURANCE**

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- B. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.
- C. Operational Limitations: do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction exposed on exterior or in occupied spaces in a manner that would, in the Government's opinion, reduce the building's aesthetic or visual qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction which was cut and patched in a visually unsatisfactory manner.
- E. Warranty or existing warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

##### **1.2 DESCRIPTION**

- A. Install Work in such a manner and sequence as to preclude or minimize cutting and patching of new Work.
- B. Execute cutting (including excavation), fitting or patching of Work, required to:
  - 1. Make several parts fit properly.
  - 2. Uncover Work to provide for installation of ill timed Work.
  - 3. Remove and replace defective Work.
  - 4. Remove and replace non-conforming Work.
  - 5. Remove samples of installed Work for testing.
  - 6. Provide rerouting penetrations of non-structural surfaces for installation of piping and electrical conduit.
- C. Do not endanger any Work or any Work of other Contractors, by cutting, excavating, or otherwise altering any Work except with written consent of the Government.
- D. Do not cut into or cut away any structural concrete or other structural members, any other concrete nor dig under any foundations or into structural walls or other parts, or in any case allow same to be done without full knowledge and written consent of the Government.
- E. Be responsible for damage resulting from violation of these provisions.
- F. Use only firms or individual trades qualified to perform Work required under this Section.

##### **1.3 JOB CONDITIONS**

- A. Before start of Work, obtain and pay for all permits required by all authorities having jurisdiction and notify all interested utilities companies.
- B. Obtain approval of the Government and authorities having jurisdiction for Work which affects existing exitways, exit stairs, means of egress, or access to, or exit from, areas.

1. Review with and obtain approval of authorities for any temporary construction which affects such areas.
- C. Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- D. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- E. Avoid cutting existing utilities, pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until alternate provisions have been provided.

#### **1.4 PAYMENT FOR COSTS**

- A. Costs associated with defective work, work performed out of sequence, or work that does not conform to Contract shall be corrected at no additional cost to the Government.

### **PART 2 - PRODUCTS**

#### **2.1 MATERIALS - GENERAL**

- A. For exposed surfaces, use materials that are identical to and visually match adjacent surfaces, or use materials that visually match adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used.
- B. Where applicable, comply with specifications for type of Work to be performed.

### **PART 3 - EXECUTION**

#### **3.1 INSPECTION**

- A. Perform preliminary investigations as required to ascertain extent of Work.
  1. Conditions which would be apparent by such investigation will not be allowed as cause for claims for extra costs.
- B. Inspect existing conditions for work, including elements subject to movement or damage during:
  1. Cutting and patching.
  2. Excavating and backfilling.
- C. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.
- D. Before proceeding, meet at Project Site with parties involved in cutting and patching, including mechanical and electrical trades.
  1. Review areas of potential interference and conflict.
  2. Coordinate procedures and resolve potential conflicts before proceeding.
- E. After uncovering existing conditions for Work, inspect conditions affecting installation of new products or Work.

#### **3.2 PREPARATION PRIOR TO CUTTING**

- A. Provide adequate shoring, bracing and support as required to maintain structural integrity of Project.
- B. Provide protection for other portions of Project which may be affected.
- C. Provide protection from elements when required.

#### **3.3 CUTTING AND REMOVAL - GENERAL**

- A. Execute fitting and adjustment to provide finished installation to comply with specified tolerances and finishes.

- B. Execute cutting by methods which will prevent damage to existing or other Work and will provide proper surfaces to receive installation of new Work.
- C. Perform backfilling as specified in applicable sections.
- D. Neatly cut and remove materials, and prepare all openings to receive new work.
- E. Remove masonry or concrete in small sections.
- F. Provide shoring, bracing, and other supports to prevent movement, settlement, or collapse of remaining or adjacent wall areas, structure, or facilities.
- G. Arrange shoring, bracing, and supports to prevent overloading of structure.
- H. Take all precautions necessary to prevent damage to existing remaining work or to adjacent facilities.
- I. Execute Work using methods which will prevent interference with use of remaining and adjacent facilities by the Government.
- J. Remove existing work indicated to be removed, or as necessary for installation of new Work.
- K. Provide for cutting, fitting, repairing, patching and finishing of Work disturbed by installation of new Work.

### **3.4 CUTTING IN CONCRETE CONSTRUCTION**

- A. Where an opening larger than 10 IN in any dimension is required, or where dimension between 2 openings in less than 2 times maximum dimension of largest opening, and condition is not shown on architectural or structural drawings, obtain prior written approval of the Government.
  - 1. At floor slabs and walls to be core drilled or cut, contractor shall find and mark all reinforcing in both faces located by means of x-ray, pach-ometer, or prof-ometer. Submit sketch showing location of rebar and proposed cuts or cores for review.
  - 2. When written approval is obtained, comply with additional requirements and instructions of Architect.

### **3.5 CUTTING IN STEEL FRAME AND METAL DECK CONSTRUCTION**

- A. Do not cut nor drill holes in webs and flanges of columns, beams, purlins, and joists without prior written approval of the Government.
  - 1. When approval is obtained, comply with requirements and instructions of the Government and provide reinforcing at such locations when required.
- B. When openings are cut into metal decks having cast-in-place concrete slab over metal deck:
  - 1. No reinforcing of holes is required for circular openings or sleeves up to 6 IN diameter and for rectangular openings having no side dimension greater than 6 IN.
  - 2. Reinforce openings greater than 6 IN.
  - 3. Obtain prior written approval of the Government for openings not shown on architectural or structural drawings.
    - a. Comply with additional requirements and instructions of the Government.
- C. When openings are cut into metal roof decks:
  - 1. No reinforcing of holes is required for circular openings less than 6 IN diameter and for rectangular openings having no side dimension greater than 6 IN.
  - 2. Reinforce openings between 6 IN and 12 IN, with 20 GA flat steel sheet 12 IN greater in dimension than opening; fusion weld to top surface of deck at each corner and on each side midway between corners.
  - 3. Do not cut openings greater than 12 IN without prior written approval of the Government.
    - a. Comply with requirements and instruction of the Government.

### **3.6 MATCHING AND PATCHING**

- A. Where items are removed from existing walls, ceilings, floors or partitions to remain, repair wall, ceiling, floor or partition disturbed by removal.
- B. Where walls, ceilings, floors or partitions are removed, repair abutting walls, ceilings or floors disturbed by removal.
- C. Where existing construction is cut, removed or otherwise disturbed to permit installation of new Work, match and patch existing disturbed construction.
- D. Use methods and materials similar in appearance, and equal in quality to areas or surfaces being repaired.
- E. Restore Work which has been cut or removed; install new products to provide completed Work in accord with requirements of Contract Documents.
- F. Patch Work must in every way possible match existing work and adjacent surfaces.
- G. Re-finish entire surfaces as necessary to provide an even finish to match adjacent finishes.
  - 1. Continuous surfaces; to nearest intersections.
  - 2. Assembly; entire refinishing.
- H. In existing areas remove and replace existing ceilings and finishes for installation of Work, if not shown to be removed on Architectural Drawings and Schedules.
  - 1. If existing ceiling can not be satisfactorily reinstalled, replace with like materials and construction.
  - 2. Replace damaged construction with like materials.

**END OF SECTION**